The Impacts of the Affordable Care Act on Preventive Services among Racial Groups

UNDERGRADUATE RESEARCH THESIS

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ABSTRACT

On March 23, 2010, President Obama signed the Patient Protection and Affordable Care Act, also known as the Affordable Care Act (ACA) or Obamacare, into law to reduce the cost of health insurance premiums. Part of the ACA provisions removed the cost-sharing requirements for a list of preventive services. Prior research has documented that more people are covered by health insurance after the implementation of the ACA. I sought to understand whether the ACA has affected racial disparities in utilizing preventive services. Data from the 2007 to 2014 Medical Expenditure Panel Survey was examined. The United States Preventive Services Task Force guidelines regarding recommended preventive services (e.g. blood pressure checks, routine checkups, flu shots, pap smears, mammogram, and colonoscopies) were examined. Use of preventive services from a non-elderly population (aged 18 to 64), segmented by race and ethnicity (non-Hispanic Whites, non-Hispanic Blacks, Asians, Hispanics, and other races), was compared during the pre-ACA period (2007 – 2010) and post-ACA period (2011 – 2014). Racial disparities during the pre-ACA and post-ACA periods for each preventive service were examined. The results revealed that the size of the racial disparities varied across services. Despite the zero co-pay requirement for preventive services, the use of some services remained unchanged or even decreased. Racial disparities still exist in the post-ACA period. In order to promote the use of clinically recommended preventive services, the government should consider other methods to increase the awareness of the importance of preventive services.

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TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

On March 23, 2010, President Obama signed the Patient Protection and Affordable Care Act, also known as the Affordable Care Act (ACA) or Obamacare, into law to reduce the cost of health insurance premium. It is a significant event in the United States health reform. There were around thirty-eight to forty-eight million Americans who did not have health insurance coverage at that time. The primary purpose of the ACA is to protect uninsured individuals from catastrophic medical expenses, which can, potentially, lead to bankruptcy and home foreclosures (Martin, 2015). In order to achieve its goals, the ACA creates an insurance marketplace, also called exchanges, to make health insurance more affordable to individuals with income up to 400% of the federal poverty level by offering federal subsidies. The law requires insurance companies to provide new minimum standards to all applicants at the same rates regardless of preexisting conditions or sex (Martin, 2015). Additionally, the ACA requires private insurance issuers to cover recommended preventive health services without charging co-pays (Martin, 2015). Preventive health care, which includes immunizations, routine checkups, and screenings, helps individuals identify life-threatening diseases at an earlier stage, enables them to seek proper treatment for those diseases, and can also help to prevent chronic diseases, such as heart disease and diabetes (McMorrow, Kenney, & Goin. 2014).

Provisions of the ACA include an expansion to Medicaid. Previously Medicaid targeted special populations, such as children, parents with dependent children, pregnant women, people aged 65 years or older, and individuals with disabilities. Medicaid expansion fills the gap of lower income individuals without children or disabilities. Approximately 6.4% of non-Hispanic Whites, 10.3% of non-Hispanic Blacks, and 13.7% of Hispanics are targeted by the Medicaid expansions (Abdus et al., 2015). Even though participating in Medicaid expansion is voluntary,

as of October 14, 2016, thirty-one states and the District of Columbia (DC) offer Medicaid expansion (KFF.org).

Since the implementation of the ACA in 2010, more people, especially lower income individuals, now have the minimum health insurance coverage. The ACA had noticeable impacts on lower income individuals and children. As a result of the Medicaid expansions, 16.9 million individuals, that had previously been uninsured, gained health insurance coverage between 2013 and 2015 (Chen, Vargas-Bustamante, Mortensen, & Ortega 2016). Before the Medicaid expansions, racial minorities made up higher proportions of the target populations of Medicaid expansions compared to non-Hispanic Whites. Evidence has shown that the racial and ethnic disparities in insurance coverage became narrower in 2014 (Quealy, & Sanger-Katz, 2014). Additionally, racial and ethnic disparities in preventive care have been well documented (Abdus, Mistry, & Selden, 2015). Since the co-pay requirements for several preventive services have been removed, I expect that the utilization of these preventive services will increase, especially for racial minorities. Building upon these facts, this study will examine the impacts of the ACA on preventive services among different racial populations.

Prior research has demonstrated that more people are covered by health insurance after the implementation of the ACA (Quealy, & Sanger-Katz, 2014). Therefore, I seek to understand whether specific populations utilize their health insurance benefits to improve their health through preventive care more so than they did before acquiring health insurance coverage. My study will build on the earlier research and specifically focus on six preventive services and the disparities among racial groups. The six preventive services studied include blood pressure check, routine checkup, flu shot, pap smear, mammogram, and colonoscopy. This study will

examine the disparities among non-Hispanic Whites, non-Hispanic Blacks, Asian, Hispanics, and other races in the use of preventive services.

This study aims to provide evidence to whether the ACA has reduced the gaps in utilizing preventive services among different racial groups. This research can assist policymakers in making modifications to the ACA, in such a way that more individuals will be able to fully utilize the benefits of their health insurance.

LITERATURE REVIEW

McMorrow, Kenney, and Goin (2014) analyzed the determinants of receipt of recommended preventive services. Emphasis on prevention in recent years was one of the reasons that led to the passage of the ACA. McMorrow et al. (2014) used data from the 2005 to 2010 Medical Expenditure Panel Survey to measure the utilization of eight recommended preventive services to demonstrate whether expanding the coverage increased the usage of the services. Results showed that from 2005 to 2010, more than 85% of adults met the recommendations for blood pressure screening and Pap tests. However, only 28% received a flu vaccine and under 50% of target population (aged 50 to 64 years) received colon cancer screenings (McMorrow et al., 2014). Within each preventive service, higher income individuals were more likely than their lower income counterparts to receive the services. One of the explanations for the disparities was higher income individuals were more likely to be covered by employer-sponsored insurance and were less likely to be non-Hispanic Blacks or Hispanics. Their results provided evidence that if lower income individuals had the same health coverage as the higher income individuals, their use of preventive services would be significantly higher. They also found that insurance coverage and education were strongly associated with the usage of preventive services.

Abdus, Mistry, and Selden (2015) examined the pre-ACA period racial and ethnic disparities in health services, which included health insurance coverage, access to care, and preventive services. The sample populations were separated into three distinctive racial groups: non-Hispanic Whites, non-Hispanic Blacks, and Hispanics. Results showed that, after the implementation of the ACA, a higher proportion of non-Hispanic Blacks and Hispanics would become eligible for marketplace coverage compared to non-Hispanic Whites. Among the three

groups, non-Hispanic Whites had the highest usage rate of preventive services and Hispanics had the lowest usage rate.

Wong, Ford, French, and Rubin (2015) analyzed the impact of the ACA on young adults' routine care and usual sources of care. On September 23, 2010, the ACA expansion required insurance plans to extend coverage to young adults from aged 19 to 26 years old, by allowing children up to age 26 to stay on their parents' health insurance plans. Before this expansion, young adults generally had a lower health insurance coverage rate than adolescences and elder people. They used data from the 2006 to 2012 versions of the Medical Expenditure Panel Survey to assess the trends in young adults' usage of routine care services. They used logistic regression models to analyze the data obtained from the Medical Expenditure Panel Survey. The results showed that the percentage of young adults with routine visits increased from 42.4% in 2006 to 49.5% in 2011. Overall, about 59% of young adults had the access to usual sources of care. In addition, young adults with usual sources of care were more likely to complete routine checkups (Wong et al., 2015). This study demonstrated that the ACA increased the number of insured young adults aged 19 to 25 years, and increased the likelihood of them undergoing routine check-ups among insured young adults.

HYPOTHESIS

The ACA helped to increase the percentage of insured individuals especially in its target populations, including individuals with income less than 400% of the federal poverty level. Additionally, racial minorities had a higher proportion of their populations that would become eligible for health insurance coverage compared to non-Hispanic Whites. There were racial disparities in the use of preventive services before the implementation of the ACA. After reviewing the existing research, my hypothesis is that the ACA has reduced the gaps in utilization among different racial groups.

METHODOLOGY

Data

Data were gathered from the Medical Expenditure Panel Survey (MEPS), which collected detailed demographic, socioeconomic, insurance, and health care utilization information of a nationally representative sample in the United States.

Study Population

The study population included non-elderly adults aged 18 to 64. Table 1 provides the details of the sample characteristics.

Outcome Variables

Six preventive services, including: blood pressure check, routine checkup, flu shot, pap smear, mammogram, and colonoscopy, were studied. The United States Preventive Services Task Force (USPSTF) recommendations regarding age and frequency of the services were followed. The usages of the following services for all individuals in my study population was including:

1. Blood pressure check, routine checkup, and flu shot within the past year,
2. Pap smear within the past three years for females aged 21 and above,
3. Mammogram within the past two years for females aged 50 and above,
4. Colonoscopy within the past ten years for both males and females aged 50 and above,

Because some of these tests can be performed to monitor a disease, individuals with certain medical conditions were excluded (e.g. an individual with self-reported breast cancer history was excluded from mammogram analysis).

Independent Variables

Race/ethnicity was categorized into Hispanics, non-Hispanic Whites, non-Hispanic Blacks, Asian, and other races. The analysis focused on two periods: pre-ACA and post-ACA. Pre-ACA period was from 2007 to 2010 and post-ACA period was from 2011 to 2014.

Covariates

Covariates were included in the analysis, including: age, gender (males and females), education level (below high school, high school, and above high school), income (below 100% of federal poverty level [FPL], between 100% and 125% of FPL, between 125% and 200% of FPL, between 200% and 400% of FPL, and above 400% of FPL), usual source of care (have access and no access), insurance type (private, public, and uninsured), marital status (married and not married), perceived health status (excellent, very good, good, fair, and poor), and a continuous year variable.

Analysis

All the variables, except for age and year, were converted to binary variables. For example, if a sample received blood pressure check within the past year, it would be reclassified into 1 and otherwise 0. We captured the policy effects by interaction terms of each race variable by the ACA indicator (ACA = 0 for pre-ACA period, ACA = 1 for post-ACA period). Binary logistic regressions and odds ratios (OR) were used to analyze the impacts of the ACA. Survey sample weights were used to account for the complex MEPS survey design. We performed statistical analysis using STATA 14.

RESULTS

The sample characteristics are displayed in Table 1. Around half of the general sample adults were non-Hispanic Whites. Hispanics consisted of thirty percent of the sample, followed by non-Hispanic Blacks. Descriptive results are shown in Table 2. Logistic regression results for are shown in Table 3.

Blood Pressure Check

Non-Hispanic Whites had the highest utilization rate in both pre-ACA and post-ACA periods, 76.70% and 78.22% respectively. Non-Hispanic Blacks (73.73% in pre-ACA and 74.78% in post-ACA) and other races (72.05% in pre-ACA and 74.54% in post-ACA) had slightly lower utilization rates. Hispanics had the lowest utilization rates among all racial groups, 60.32% in pre-ACA and 63.18% in post-ACA. Compared to non-Hispanic Whites, Asians (OR = 1.04, p-value = 0.58) and other races (OR = 1.04, p-value = 0.80) had a greater increase in the utilization rate in the post-ACA period, which reduced the racial disparities with respect to non-Hispanic Whites. On the other hand, non-Hispanic Blacks (OR = 0.98, p-value = 0.63) and Hispanics (OR = 0.98, p-value = 0.55) had less increase in the utilization rate. However, none of these changes were significant.

Routine Checkup

There was an increase in the utilization of routine checkup in the post-ACA period across all racial groups (OR = 1.13, p-value < 0.05). Non-Hispanic Blacks had the highest utilization rate, followed by non-Hispanic Whites, in both pre-ACA and post-ACA periods, 66.05% and 69.52% respectively. Hispanics had the lowest utilization rate among all racial groups, 50.02% in pre-ACA and 53.94% in post-ACA. In the post-ACA period, compared to non-Hispanic Whites, all other races had less increase in the utilization. It implied that relative to non-Hispanic Whites,

the gap became smaller for non-Hispanic Blacks in the post-ACA period (OR = 0.96, p-value = 0.27); while the gaps became larger for Asians (OR = 0.98, p-value = 0.68), Hispanics (OR = 0.92, p-value < 0.05), and other races (OR = 0.93, p-value = 0.47). The increase in utilization rate was significantly lower for Hispanics (OR = 0.92, p-value < 0.05).

Flu Shot

Asians had the highest receipt rate, followed by non-Hispanic Whites, non-Hispanic Blacks, and other races. Hispanics had the lowest receipt rate in both pre-ACA and post-ACA periods, 22.86% and 29.83% respectively. Compared to non-Hispanic Whites, only other races (OR = 0.89, p-value = 0.29) had less increase in the receipt rate of flu shot in the post-ACA period, but not significant. Non-Hispanic Blacks had a significantly higher increase in the post-ACA period (OR = 1.14, p-value < 0.05).

Pap Smear

Other races had the lowest utilization rate in the pre-ACA period (78.93%). However, in the post-ACA period, other races' utilization rate, 83.93%, exceeded non-Hispanic Whites' and Asians' utilization rates, 83.91% and 78.84% respectively. Non-Hispanic Blacks had the highest rates in both periods, 89.84% in pre-ACA and 88.89% in post-ACA. All races had greater increase in the utilization rate compared to non-Hispanic Whites in the post-ACA period. Same as the descriptive results, other races had a significant increase relative to non-Hispanic Whites (OR = 1.58, p-value < 0.05).

Mammogram

In the post-ACA period, non-Hispanic Whites and Asians had a decrease in the utilization of mammogram, -1.48% and -1.52% respectively. Non-Hispanic Blacks had the highest utilization rate in both periods (79.11% in pre-ACA and 79.90% in post-ACA); while other races

had the lowest utilization rate (67.62% in pre-ACA and 74.16% in post-ACA). Except for Asians (OR = 0.95, p-value = 0.79), all other races had greater increase in the use of mammogram compared to non-Hispanic Whites, but none of them were significant.

Colonoscopy

MEPS combined the questions regarding the time of last colonoscopy and sigmoidoscopy into one question before the 2009 survey. As a result, the pre-ACA period only included years 2009 and 2010 for colonoscopy. In both periods, non-Hispanic Whites had the highest utilization rates, 54.71% in pre-ACA and 56.68% in post-ACA. In the pre-ACA period, Asians had the lowest utilization rate (33.85%). In the post-ACA period, Hispanics had the lowest utilization rate (39.06%) and Asians had a slightly higher utilization rate (39.98%). There were no significant changes in the racial disparities.

LIMITATIONS

There are several limitations to this study. First, our outcome measures were based on self-reported survey. Over-reporting or under-reporting, both common problems in any survey data, could impact our analysis. Second, we did not have detailed insurance benefit design information. Some individuals may have had preventive services covered without co-pays before the implementation of the ACA, thus, the ACA would not have any impacts on their use of preventive services. Third, the changes in guideline might affect our analysis. In 2012, USPSTF updated the recommendations of cervical cancer screening. The updated recommendation suggested having pap smear every three years for women aged 21 to 65 or having a combination of pap smear and human papillomavirus (HPV) testing every five years for women aged 30 to 65. The mammogram guidelines were changed in 2013. It updated the recommended age range from 40 years or older to 50-74 years. Lastly, we relied on self-reported diseases to differentiate preventive services from diagnostic or surveillance tests, which might not reflect the precise reason of receiving a test.

DISCUSSION

Overall, no significant changes in racial disparities across all six preventive services were observed. Some racial disparities became narrower and some become wider in the post-ACA period. The ACA was associated the increased utilization of blood pressure check, routine checkup, pap smear, and colonoscopy. Besides race and ethnicity, other factors, such as age, gender, income, access to usual source of care, and education level, were strongly related to the utilization of preventive services. For instance, elder individuals were more likely to use preventive services, and females were more likely to utilize preventive services than males. Wealthy individuals (income above 400% of FPL) were more likely to use preventive services. Individuals with access to usual source of care had significantly higher utilization rates.

This study revealed that impacts of the ACA on racial disparities of using preventive care varied by service type. Different minority groups also responded to the policy change differently. Our findings will help policy makers and practitioners to better design strategies to promote preventive care among certain population groups. Approaches other than mandating the insurance benefits should also be considered to increase the awareness of the benefits of preventive services, especially among individuals with lower income and less education attainment.

Table 1: Summary of Sample Characteristics

	Blood Pressure Check	Routine Checkup	Flu Shot	Pap Smear	Mammogram	Colonoscopy
Total	111,476	148,963	149,895	71,713	21,951	33,371
ACA						
Pre-ACA	0.48	0.48	0.48	0.48	0.48	0.32
Post-ACA	0.52	0.52	0.52	0.52	0.52	0.68
Race/Ethnicity						
Non-Hispanic White	0.42	0.43	0.43	0.42	0.50	0.50
Non-Hispanic Black	0.17	0.19	0.19	0.21	0.22	0.20
Asian	0.08	0.07	0.07	0.07	0.06	0.07
Hispanic	0.31	0.29	0.29	0.28	0.20	0.21
Other Races	0.02	0.02	0.02	0.02	0.02	0.02
Gender						
Female	0.54	0.54	0.54	1.00	1.00	0.53
Male	0.46	0.46	0.46			0.47
Education						
Less than High School	0.07	0.07	0.07	0.07	0.09	0.09
High School	0.44	0.44	0.44	0.40	0.40	0.40
Above High School	0.49	0.49	0.49	0.53	0.51	0.51
Income						
< 100% FPL	0.18	0.19	0.19	0.21	0.15	0.14
100-125% FPL	0.06	0.06	0.06	0.06	0.05	0.05
125-200% FPL	0.16	0.16	0.16	0.16	0.14	0.13
200-400% FPL	0.30	0.30	0.30	0.29	0.29	0.29
> 400% FPL	0.30	0.29	0.29	0.28	0.37	0.39
Usual Source of Care						
Yes	0.64	0.69	0.69	0.75	0.85	0.82
No	0.36	0.31	0.31	0.25	0.15	0.18
Insurance						
Private	0.60	0.61	0.61	0.60	0.67	0.67
Public	0.15	0.16	0.16	0.19	0.16	0.15
Uninsured	0.25	0.23	0.23	0.21	0.17	0.18
Marital Status						
Married	0.49	0.51	0.50	0.52	0.57	0.61
Not Married	0.51	0.49	0.50	0.48	0.43	0.39
Perceived Health						
Excellent	0.31	0.26	0.26	0.22	0.17	0.18
Very Good	0.34	0.32	0.32	0.32	0.30	0.30
Good	0.27	0.29	0.29	0.31	0.32	0.32
Fair	0.07	0.10	0.10	0.12	0.16	0.15
Poor	0.01	0.03	0.03	0.03	0.05	0.05

Table 2: Descriptive Results of the Utilization Rate for Each Preventive Service

	Pre-ACA	Post-ACA	Unadjusted Difference
Blood Pressure Check			
Non-Hispanic White	76.70%	78.22%	1.52%
Non-Hispanic Black	73.73%	74.78%	1.05%
Asian	67.41%	68.74%	1.33%
Hispanic	60.32%	63.18%	2.86%
Other Races	72.05%	74.54%	2.49%
Routine Checkup			
Non-Hispanic White	59.23%	63.73%	4.50%
Non-Hispanic Black	66.05%	69.52%	3.47%
Asian	56.60%	60.61%	4.01%
Hispanic	50.02%	53.94%	3.92%
Other Races	56.20%	58.79%	2.59%
Flu Shot			
Non-Hispanic White	32.45%	38.81%	6.36%
Non-Hispanic Black	24.31%	32.26%	7.95%
Asian	32.72%	39.45%	6.73%
Hispanic	22.86%	29.83%	6.97%
Other Races	30.44%	34.53%	4.09%
Pap Smear			
Non-Hispanic White	85.35%	83.91%	-1.44%
Non-Hispanic Black	89.84%	88.89%	-0.95%
Asian	79.44%	78.84%	-0.60%
Hispanic	86.54%	85.83%	-0.71%
Other Races	78.93%	83.93%	5.00%
Mammogram			
Non-Hispanic White	78.14%	76.66%	-1.48%
Non-Hispanic Black	79.11%	79.90%	0.79%
Asian	75.92%	74.40%	-1.52%
Hispanic	74.26%	76.33%	2.07%
Other Races	67.62%	74.16%	6.54%
Colonoscopy			
Non-Hispanic White	54.71%	56.68%	1.97%
Non-Hispanic Black	51.37%	54.57%	3.20%
Asian	33.85%	39.98%	6.13%
Hispanic	35.66%	39.06%	3.40%
Other Races	43.61%	48.80%	5.19%

Table 3: Logistic Regressions for Each Preventive Service

	Blood Pressure Check			Routine Checkup			Flu Shot		
	Odds Ratio	**95% CI**	**P-Value**	**Odds Ratio**	**95% CI**	**P-Value**	**Odds Ratio**	**95% CI**	**P-Value**
ACA	1.07	0.98-1.16	0.13	1.13	1.05-1.20	0.00	0.91	0.85-0.97	0.01
Non-Hispanic White*ACA	Reference								
Non-Hispanic Black*ACA	0.98	0.88-1.08	0.63	0.96	0.89-1.03	0.27	1.14	1.06-1.23	0.00
Asian*ACA	1.04	0.91-1.18	0.58	0.98	0.88-1.09	0.68	1.03	0.92-1.14	0.64
Hispanic*ACA	0.98	0.90-1.06	0.55	0.92	0.86-0.98	0.01	1.06	0.98-1.13	0.13
Other Races*ACA	1.04	0.79-1.35	0.80	0.93	0.76-1.14	0.47	0.89	0.73-1.10	0.29
Non-Hispanic White	Reference								
Non-Hispanic Black	1.20	1.12-1.30	0.00	1.81	1.71-1.91	0.00	0.81	0.76-0.85	0.00
Asian	0.63	0.57-0.70	0.00	1.06	0.98-1.15	0.12	1.13	1.05-1.23	0.00
Hispanic	0.86	0.81-0.92	0.00	1.24	1.18-1.31	0.00	1.02	0.97-1.08	0.48
Other Races	0.90	0.74-1.10	0.29	1.01	0.87-1.17	0.87	1.08	0.93-1.25	0.34
Age	1.01	1.01-1.01	0.00	1.02	1.02-1.02	0.00	1.02	1.02-1.03	0.00
Female	2.37	2.28-2.46	0.00	1.70	1.65-1.75	0.00	1.45	1.40-1.49	0.00
Married	1.11	1.06-1.16	0.00	1.14	1.10-1.78	0.00	1.10	1.07-1.14	0.00
Usual Source of Care	2.56	2.47-2.67	0.00	2.63	2.54-2.72	0.00	1.81	1.75-1.88	0.00
Above High School	Reference								
Less than High School	0.60	0.56-0.65	0.00	0.81	0.76-0.86	0.00	0.77	0.72-0.82	0.00
High School	0.73	0.70-0.76	0.00	0.91	0.88-0.94	0.00	0.74	0.71-0.76	0.00
> 400% FPL	Reference								
< 100% FPL	0.73	0.68-0.78	0.00	0.76	0.72-0.80	0.00	0.83	0.79-0.88	0.00
100-125% FPL	0.69	0.63-0.75	0.00	0.73	0.68-0.78	0.00	0.83	0.77-0.90	0.00
125-200% FPL	0.70	0.66-0.74	0.00	0.74	0.71-0.78	0.00	0.79	0.75-0.83	0.00
200-400% FPL	0.77	0.73-0.81	0.00	0.81	0.78-0.84	0.00	0.82	0.79-0.85	0.00
Uninsured	Reference								
Private	2.51	2.39-2.63	0.00	2.33	2.24-2.43	0.00	2.20	2.10-2.31	0.00
Public	2.70	2.53-2.87	0.00	2.90	2.75-3.05	0.00	2.24	2.12-2.37	0.00
Excellent	Reference								
Very Good	1.22	1.17-1.28	0.00	1.08	1.04-1.13	0.00	1.10	1.06-1.14	0.00
Good	1.55	1.48-1.63	0.00	1.26	1.21-1.31	0.00	1.14	1.10-1.19	0.00
Fair	2.66	2.43-2.90	0.00	1.60	1.50-1.69	0.00	1.49	1.41-1.58	0.00
Poor	5.67	4.53-7.09	0.00	2.20	1.98-2.45	0.00	1.72	1.57-1.89	0.00
Continuous Year	1.00	0.98-1.02	0.94	1.02	1.01-1.03	0.00	1.09	1.08-1.11	0.00

Table 3: Logistic Regressions for Each Preventive Service (Continued)

	Pap Smear			Mammogram			Colonoscopy		
	Odds Ratio	**95% CI**	**P-Value**	**Odds Ratio**	**95% CI**	**P-Value**	**Odds Ratio**	**95% CI**	**P-Value**
ACA	1.05	0.94-1.19	0.38	0.96	0.80-1.15	0.65	1.08	0.96-1.22	0.20
Non-Hispanic White*ACA	Reference								
Non-Hispanic Black*ACA	1.01	0.88-1.16	0.89	1.09	0.89-1.34	0.40	1.06	0.92-1.23	0.44
Asian*ACA	1.09	0.90-1.33	0.39	0.95	0.68-1.34	0.79	1.06	0.83-1.36	0.65
Hispanic*ACA	1.05	0.93-1.19	0.44	1.14	0.91-1.43	0.25	1.04	0.88-1.23	0.61
Other Races*ACA	1.58	1.09-2.28	0.02	1.47	0.83-2.60	0.19	0.96	0.60-1.54	0.87
Non-Hispanic White	Reference								
Non-Hispanic Black	2.14	1.92-2.38	0.00	1.73	1.48-2.02	0.00	1.19	1.05-1.34	0.01
Asian	0.59	0.51-0.68	0.00	1.11	0.87-1.41	0.42	0.52	0.42-0.63	0.00
Hispanic	1.71	1.54-1.89	0.00	1.77	1.48-2.11	0.00	0.78	0.68-0.90	0.00
Other Races	0.75	0.58-0.96	0.03	0.74	0.51-1.08	0.12	0.83	0.56-1.23	0.36
Age	0.97	0.97-0.97	0.00	1.02	1.01-1.03	0.00	1.11	1.10-1.12	0.00
Female	Omitted						1.01	0.95-1.08	0.66
Married	1.61	1.52-1.71	0.00	1.27	1.16-1.39	0.00	1.13	1.06-1.20	0.00
Usual Source of Care	1.92	1.80-2.04	0.00	3.07	2.75-3.42	0.00	2.65	2.42-2.90	0.00
Above High School	Reference								
Less than High School	0.73	0.65-0.82	0.00	0.72	0.61-0.86	0.00	0.57	0.50-0.65	0.00
High School	0.62	0.59-0.66	0.00	0.73	0.66-0.80	0.00	0.71	0.66-0.75	0.00
> 400% FPL	Reference								
< 100% FPL	0.87	0.78-0.96	0.01	0.56	0.48-0.66	0.00	0.73	0.65-0.82	0.00
100-125% FPL	0.78	0.69-0.89	0.00	0.57	0.46-0.70	0.00	0.71	0.60-0.84	0.00
125-200% FPL	0.74	0.67-0.81	0.00	0.51	0.45-0.59	0.00	0.59	0.53-0.65	0.00
200-400% FPL	0.78	0.72-0.84	0.00	0.68	0.61-0.76	0.00	0.75	0.70-0.81	0.00
Uninsured	Reference								
Private	2.33	2.16-2.51	0.00	3.00	2.67-3.37	0.00	2.76	2.50-3.05	0.00
Public	2.12	1.94-2.32	0.00	2.58	2.24-2.98	0.00	2.20	1.95-2.47	0.00
Excellent	Reference								
Very Good	0.99	0.91-1.07	0.76	1.06	0.93-1.20	0.37	1.10	1.01-1.20	0.03
Good	0.84	0.77-0.90	0.00	0.92	0.81-1.04	0.17	1.11	1.01-1.21	0.03
Fair	0.70	0.63-0.77	0.00	0.82	0.70-0.97	0.02	1.26	1.13-1.41	0.00
Poor	0.48	0.41-0.55	0.00	0.68	0.55-0.83	0.00	1.67	1.42-1.95	0.00
Continuous Year	0.95	0.93-0.98	0.00	0.98	0.95-1.02	0.00	1.00	0.97-1.03	0.85

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